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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,310	06/25/2003	Rafael Storz	5005.1051	5265

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EXAMINER
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BUI PHO, PASCAL M

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 09/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/603,310

Applicant(s)

STORZ, RAFAEL

Examiner

Pascal M. Bui-Pho

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 4-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-20 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

This Office action is responsive to communications filed on 21 June 2006. Presently, claims 1 and 4-20 remain pending.

#### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 5-8, 10, 15, 16, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Green et al. (US 6,724,419) in view of Tsien (US 5,283,433).

**With regards to claims 1, 15, and 16,** Green et al. disclose in Fig. 1 a method for setting the system parameters of a microscope (100) comprising the steps of: controlling an acquisition of an image of a specimen with a control computer (211), inputting at least one image quality feature after an image of a specimen is acquired via an inherently present operating console, it is well known in the art that a computer utilizes various available consoles such as a keyboard, mouse, and/or joystick in order to input commands (Column 6, lines 13-18; Column 10; Column 11, lines 12-34; Column 13, lines 18-50; Column 15, lines 1-38), the at least one image quality feature including a bleaching behavior of a fluorescent marking of a specimen wherein a light source of different wavelengths excite fluorophores of a fluorescently stained

specimen to desired conditions (Column 9, line 55 – Column 10, line 48); converting the at least one image quality feature into a system parameter of the microscope by the control computer, the at least one system parameter including a wavelength of the light source; and setting the at least one system parameter, wherein an image quality expected to be achievable, for the at least one inputted image quality feature, is calculated in the next acquired image (consecutive images are taken with different desired system parameters, that is, the system (100) is initialized, sets of images are acquired at different inputted Z-positions/wavelengths) and outputted to the user (231, 241). Green et al. fail to clear disclose a method specifying a confocal scanning microscope. In an analogous microscopic art, Tsien discloses in Fig. 1 the use of a confocal scanning microscope to image a specimen. Selecting/specifying a known available type of microscope to obtain high quality images would have been obvious to one of ordinary skill in the art. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Green et al. in view of Tsien in order to provide higher quality images. The further similar citation of claim 16 would have also been obvious for similar reasons set forth above.

**With regards to claims 5 and 8,** Green et al. in view of Tsien disclose a method wherein the system parameters calculated and presently set by the control computer of the microscope are outputted and/or displayed to a user of the microscope for information (231, 241 of Green et al.).

**With regards to claim 6,** Green et al. in view of Tsien disclose a method wherein the image quality expected to be achievable for the at least one image quality feature (fluorescence behavior) is displayed to the user (231, 241 of Green et al.).

**With regards to claim 10,** Green et al. in view of Tsien disclose a method wherein each image quality feature is inherently set using a control element (211 of Green et al.). It is further

known in the art that a joystick and/or trackball are common means of controlling/inputting instructions to a computer.

**With regards to claim 20**, Green et al. in view of Tsien disclose a method (231, 241 of Green et al.) to display an image quality feature to the user, but lack a clear specification of a color display. Utilizing a color display to present an image to a user is well known in the art. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Green et al. accordingly in order to provide the user with greater imaging details.

**With regards to claims 7 and 19**, Green et al. in view of Tsien disclose a method (231, 241 of Green et al.) to display an image quality feature to the user, but lack the inclusion of a color indication system. The use of different colors to distinguish different aspect of a specimen is known in the art. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Green et al. accordingly in order to facilitate visual analysis. The further similar citation of claim 19 would have also been obvious for similar reasons set forth above.

4. Claims 11-14, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cable (US 6,614,452) in view of Tsien (US 5,283,433).

**With regards to claims 11, 17, and 18**, Cable discloses in Fig. 1 a method for setting the system parameters of an imaging system (100) comprising the steps of: controlling an acquisition of an image of a specimen (106) with a control computer (110); inputting/modifying at least one image quality feature (brightness, contrast, and/or sharpness) with an operating console (610, 612) after an image of the specimen is acquired and displayed; inherently simulating the acquisition of a further image in the context of a modified system parameter (after

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an image is displayed, the brightness image quality feature, for example, may be increased and/or decreased utilizing brightness setting (320) without having to acquire a further image, hence simulating a specimen imaged under greater light intensity); and displaying the simulated further image to the user (112, Fig. 3A). Cable however fails to disclose a clear specification of a method utilizing a scanning microscope. In an analogous imaging art, Tsien discloses in Fig. 1 a scanning confocal microscope to image a specimen. Selecting/specifying a known available type of microscope to obtain high quality images would have been obvious to one of ordinary skill in the art. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Cable in view of Tsien in order to provide high quality images.

**With regards to claim 12**, Cable in view of Tsien discloses a method wherein the simulation inherently encompasses the optical imaging process of the scanning microscope (the simulation process must include the acquisition of an image of said specimen) and is based on the image of the specimen already detected (Column 2 and Columns 4-6 of Cable).

**With regards to claim 13**, Cable in view of Tsien discloses a method wherein the user inherently modifies at least one further system parameter, upper/lower luminescence limits (322, 324) in order to display greater and/or lesser image contrast (Column 6 of Cable).

**With regards to claim 14**, Cable in view of Tsien discloses a method wherein the simulation is accomplished on a further computer (110 of Cable) connected to an imaging apparatus.

***Allowable Subject Matter***

5. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

6. Applicant's arguments filed 21 June 2006 have been fully considered but they are not persuasive.

**With regards to claims 1 and 15**, Applicant asserts Green et al. (US 6,724,419) fail to suggest “inputting the image quality feature (such as the bleaching behavior of a fl[u]orescent marking) and having the control computer convert that feature to a system parameter (such as wavelength)”. Examiner respectfully disagrees. Applicants are invited to review Column 9, line 55 – Column 10, line 60 wherein Green et al. disclose a microscope subsystem (300) configured to vary wavelengths of light used to illuminate a specimen (332) so a researcher can observe different cellular structures and/or events both through time and at different depths within a cell or tissue by exciting different dyes at different wavelengths. Depending on the researcher's preferences, a system may be set up to vary both a Z-position and the wavelength while camera is acquiring images. When a researcher opts to change both the Z-position and the wavelength (inputting image quality feature which *directly* relates bleaching behavior), the camera (330) will direct focuser (340) to move objective lens (324) to a corresponding Z-position and then direct wavelength (316, 320) to switch to a new wavelength (system parameter). The rejection set forth with respect to claims 1, 15, and their respective dependent claims are therefore deemed proper.

**With regards to claim 11**, Applicant asserts Cable (US 6,614,452) is void of a simulation step wherein an acquisition of a further image is simulated in the context of a modified system parameter. More specifically, “There is no suggestion for simulating “the acquisition of a further image” as recited in claim 11, nor for simulating the acquisition of the further image “in the context of a modified system parameter” as recited in claim 11”. Examiner respectfully disagrees. In its broadest reasonable interpretation, the term “simulating a further image” herein is considered to represent a display and/or calculation of an *expected* image output/result *without* performing a further imaging step. Cable discloses an imaging apparatus (100) comprising a camera (102) for capturing a plurality of photographic and luminescence images of a specimen (106) and in communication with a processing apparatus (110, 108) in order to display said image(s) on display (112). Applicant is forwarded to Column 6, lines 30-40, wherein Cable discloses a display function (314) including controls to allow the user to input desired parameters such as contrast and/or sharpness in order to simulate and display said image(s) in greater/lesser contrast and/or sharpness, hence facilitating image viewing and analysis. Examiner holds Cable to provide sufficient disclosure to anticipate Claim 11 and its corresponding dependent claims; the rejection set forth thereto is therefore deemed proper.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after




the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Telephone/Fax Information***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pascal M. Bui-Pho whose telephone number is (571) 272-2714. The examiner can normally be reached on Monday through Friday: 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
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